

WHAT IS CLAIMED IS:

1
2 1. A control method of an open type motion simulation system, the
3 method comprising the steps of:

4 a simulation system linked to a motion system;

5 the simulation system outputting open type command to the
6 motion system;

7 the motion system simultaneously performing operation and
8 analysis on the open type command and platform feedback data by platform
9 dynamic algorithm principle of a controller; and

10 the motion system then outputting control signal to a control
11 driver to drive the platform;

12 thus building integrated open type command between the
13 simulation system and the motion system.

14 2. The control method of an open type motion simulation system as
15 claimed in claim 1, wherein the platform dynamic algorithm principle is a
16 math model.

17 3. The control method of an open type motion simulation system as
18 claimed in claim 1, wherein the open type motion command of the simulation
19 system is converted into motion signal through a motion cue transfer, and the
20 feedback signal of the motion platform after being converted into status signal
21 through a status transfer, is simultaneously input into a math model of the
22 platform dynamic algorithm principle to execute operation, then outputs
23 control signal.

4. The control method of an open type motion simulation system as claimed in claim 1, wherein the simulation system and motion system on the logic architecture respectively include a presentation layer, a transaction layer, a control layer, a linking layer, and a physical layer.

5. The control method of an open type motion simulation system as claimed in claim 4, wherein the flow chart is mainly serially respectively a simulation system block, physical layer and linking layer block of a motion system, a control layer block of the motion system, a transaction layer block of the motion system, and a presentation layer block of the motion system.

6. The control method of an open type motion simulation system as claimed in claim 5, wherein the simulation system block outputs open type motion command to the physical layer and linking layer block of the motion system; the physical layer and linking layer block then convert the motion command which is output into the control layer block; the converted motion command is executed through the platform dynamic algorithm principle, the control layer block outputs the control signal into the physical layer and linking layer block; the physical layer and linking layer block then outputs the control signal into the transaction layer block; the transaction layer block then uses the control signal to directly control and drive the motion platform of the presentation layer block; the presentation layer block uses a transducer to return the platform message to the control layer block through the physical layer and linking layer block; the control layer block then uses feedback data and motion command of the platform message, to be executed by the platform dynamic algorithm principle and then outputs control signal, thus, when the

1 motion system successively receives the open type motion command from the
2 simulation system, the motion system successively executes the physical layer
3 and linking layer block, the control layer block, the transaction layer block, and
4 the presentation layer block.

5 7. The control method of an open type motion simulation system as
6 claimed in claim 4, wherein the presentation layer of the simulation system
7 includes at least one user command and application program.

8 8. The control method of an open type motion simulation system as
9 claimed in claim 7, wherein the command is input of user or operation
10 interface, and the application program is game or simulation program.

11 9. The control method of an open type motion simulation system as
12 claimed in claim 4, wherein the transaction layer of the simulation system
13 includes an architecture 3D scene Direct X, and an internet communication
14 interface RS232/NetWork, and an I/O control interface.

15 10. The control method of an open type motion simulation system as
16 claimed in claim 4, wherein the control layer of the simulation system is an
17 operation system, such as Windows 98, Windows NT or UNIX.

18 11. The control method of an open type motion simulation system as
19 claimed in claim 4, wherein the linking layer of the simulation system is a
20 kernel, such as BIOS.

21 12. The control method of an open type motion simulation system as
22 claimed in claim 4, wherein the physical layer of the simulation system is a
23 computer hardware, such as Encore R/T, SGI machine or PC.

1 13. The control method of an open type motion simulation system as
2 claimed in claim 4, wherein the presentation layer of the motion system is a
3 motion platform of 3 to 6 d.o.f.

4 14. The control method of an open type motion simulation system as
5 claimed in claim 4, wherein the transaction layer of the motion system is a
6 control driver, such as servo control driver.

7 15. The control method of an open type motion simulation system as
8 claimed in claim 4, wherein the control layer of the motion system is a
9 platform dynamic algorithm principle.

10 16. The control method of an open type motion simulation system as
11 claimed in claim 4, wherein the linking layer of the motion system is a kernel,
12 such as BIOS.

13 17. The control method of an open type motion simulation system as
14 claimed in claim 4, wherein the physical layer of the motion system is a
15 computer hardware, such as Encore R/T, SGI machine or PC and image
16 producer.

17 18. The control method of an open type motion simulation system as
18 claimed in claim 1, wherein the flow chart of the platform dynamic algorithm
19 principle is mainly respectively a block of analysis of operation space, a block
20 of inspection and correction of singular point, a block of detection of failure of
21 system, and a block of control signal transfer.

22 19. The control method of an open type motion simulation system as
23 claimed in claim 18, wherein the motion signal and status signal are input into
24 the block of analysis of operation space, the block of analysis of operation

1 space, after mutual operation and analysis between the present status and the
2 next step of operation motion, obtains motion command satisfying the motion
3 platform control; the block of inspection and correction of singular point
4 proceeds inspection and correction of the motion command; the block of
5 detection of failure of system, after certifying the system is correct, outputs the
6 motion command into the block of control signal transfer; the block of control
7 signal transfer converts the motion command into control signal satisfying the
8 motion platform.